



Research Physicist

Mesoscale Atmospheric Dynamics

Development of a Global Model for Forecasting Mountain Wave Turbulence

The **Atmospheric Dynamics Group** of the **Space Science Division** of the **Naval Research Laboratory (NRL)**, Washington, DC, is seeking candidates for basic and applied research in the field of Atmospheric Dynamics.

Our group performs wide-ranging atmospheric dynamics research from the ground up to the mesopause, with particular focus on atmospheric gravity waves at all levels. We develop new three-dimensional parameterizations of gravity waves, and analyze fine-scale dynamical features in data acquired from aircraft and satellites and in output from global models. We have recently commenced a major research project to extend to ~100 km the upper boundary of the Navy Operational Global Atmospheric Prediction System (NOGAPS), the Navy's global weather forecasting model. More information on our research program can be found at <http://uap-www.nrl.navy.mil/dynamics/html/dynamics.html>

We now require scientists to participate in a new long-term project (starting in October 2001) to develop, test and validate a global model to forecast turbulence due to mountain wave breaking at flight levels. The model will be based on new research algorithms, and will require interfacing new mountain wave parameterization codes to latest digital elevation data sets and daily global forecast output from NOGAPS. The new model will be tested against pilot reports of turbulence. It will also be applied to modeling/forecasting wave-induced polar stratospheric cloud formation (and associated ozone loss) and global gravity wave drag and diffusion, in support of NASA research programs. Close interactions are required with NOGAPS and mesoscale modeling research teams at NRL's Monterey, California facility, as well as flight planners at various airborne naval detachments.

We seek candidates for this position with a Ph.D. or equivalent experience in atmospheric science, a record of active research in atmospheric dynamics, and a desire to take a major role in the development of this new and challenging global numerical forecasting initiative. Atmospheric research-and-development skills, particularly with numerical atmospheric models, and an interest in refining these forecast products for Navy end users, are desirable. FORTRAN and/or IDL expertise is preferred but not essential..

We encourage all interested candidates to contact **Dr. Stephen Eckermann** (Tel. +1-202-404-1299 e-mail: eckerman@uap2.nrl.navy.mil) and **Dr. David Siskind** (Tel. +1-202-767-0928 e-mail: siskind@uap2.nrl.navy.mil) for further information and details.